

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application. An identifier indicating the status of each claim is provided.

Listing of Claims:

1. – 66. (Cancelled)

67. (Currently Amended) A method for stimulating a plurality of muscles of a subject, comprising the steps of:

generating an electrical pulse signal in accordance with one or more predetermined parameters for stimulating the muscles by inducing vibrations therein;
applying the signal to nerves associated with the muscles of the subject to be stimulated;

and

selecting the predetermined parameters of the electrical pulse signal to cause a predetermined cardiac output of at least 50% of the maximum cardiac output of the subject;
monitoring the cardiovascular response of the subject; and
maintaining the predetermined cardiac output by controlling said signal generator based upon the cardiovascular response.

68. (Previously Presented) The method of claim 67, wherein the electrical pulse signal induces vibrations in the muscle within a range of 3Hz to 12Hz.

69. (Previously Presented) The method of claim 68, wherein the electrical pulse signal for induces vibrations in the muscle within a range of 4Hz to 8Hz.

70. (Previously Presented) The method of claim 67, wherein said predetermined cardiac output burns calories in the muscles of the subject without performing any external work by the subject.

71. (Previously Presented) The method of claim 67, wherein a cardiovascular response is generated in response to the induced vibrations.

72. (Original) The method of claim 71, wherein said cardiovascular response is greater than 50% maximum cardiac output.

73. (Original) The method of claim 71, wherein said cardiovascular response is greater than 60%-70% maximum cardiac output.

74. (Original) The method of claim 67, further comprising the step of selecting the predetermined parameters of the electrical pulse signal generated by the signal generator to minimize discomfort to the subject.

75. (Previously Presented) The method of claim 67, wherein the electrical pulse signal comprises a plurality of single pulses at a frequency for inducing the vibrations in the muscles of the subject within a predetermined frequency range.

76. (Previously Presented) The method of claim 75, wherein said frequency range of the vibrations induced in the muscles of the subject is from 3Hz to 12Hz.

77. – 80. (Canceled)

81. (Previously Presented) The method of claim 67, wherein a charge-per-pulse of one or more pulses of the electrical pulse signal, and the electrode apparatus for applying the pulse signal to the subject co-operate with each other to maintain the charge-per-pulse per unit area of the applied electrical pulse signal at or below 16nC/mm^2 in the subject.

82. (Original) The method of claim 81, wherein the current density is maintained at or below 0.1 mA/mm^2 .

83. (Currently Amended) The method of claim 67, wherein a maximum charge-per-pulse of the electrical pulse signal exceeds approximately $60\text{ mC}_{\text{micro-Coulombs}}$.

84. (Original) The method of claim 67, wherein the pulse signal is applied to the subject by an electrode.

85. (Original) The method of claim 67, wherein the pulse signal is applied to the subject by a plurality of electrodes.

86. (Original) The method of claim 85, wherein the effective electrically conductive contact area of at least one electrode is not less than 7,500 mm².

87. (Original) The method of claim 86, wherein the effective electrically conductive contact area of at least one electrode is not less than 10,000 mm².

88. (Original) The method of claim 87, wherein the effective electrically conductive contact area of at least one electrode is not less than 15,000 mm².

89. (Original) The method of claim 85, wherein at least one of the electrodes has an effective electrical contact area such that the length of the effective electrical contact area is substantially similar to the width of the muscle to be stimulated.

90. (Previously Presented) The method of claim 89, wherein when it is desired to stimulate a quadricep or hamstring muscle group in a male of average size, the length of the effective electrical contact area of the relevant electrode is at least 140 mm.

91. (Previously Presented) The method of claim 90, wherein when it is desired to stimulate a quadricep or hamstring muscle group in a male of average size, the length of the effective electrical contact area of the relevant electrode is at least 190 mm.

92. (Previously Presented) The method of claim 85, wherein at least one of the electrodes has an effective electrical contact area such that a maximum charge may be applied to the muscles of the subject while minimizing discomfort to the subject.

93. (Currently Amended) A method for stimulating a muscle of a subject, comprising the steps of:

generating an electrical pulse signal in accordance with one or more predetermined parameters for stimulating the muscle by inducing vibrations therein;
applying the signal to nerves associated with the muscle of the subject to be stimulated for stimulating the muscle;

selecting the predetermined parameters of the electrical pulse signal to cause a predetermined cardiac output of at least 50% of the maximum cardiac output of the subject;

monitoring the cardiovascular response of the subject; and
~~maintaining the predetermined cardiac output by~~ controlling said signal based upon the cardiovascular response;

wherein the pulse signal comprises a plurality of single pulses, and the frequency of the respective pulses lies in the range 4Hz to 12Hz.

94. (Original) The method of claim 93, wherein the pulse signal comprises a plurality of single pulses, and the frequency of the respective pulses lies in the range of 4Hz to 8Hz.

95. (Original) The method of claim 93, wherein at least two of said plurality of single pulses are of different amplitudes.

96. – 107. (Canceled)

108. (Currently Amended) A method for stimulating a muscle of a subject, comprising the steps of:

generating an electrical pulse signal;

applying the signal to the muscle of a subject to induce vibrations therein; and

selecting one or more predetermined parameters of the electrical pulse signal to maximize the bulk of the muscle being subjected to the vibrations to induce cardiovascular training effects in the subject and cause a predetermined cardiac output of at least 50% of the maximum cardiac output of the subject;

monitoring the cardiovascular response of the subject; and

~~maintaining the predetermined cardiac output by~~ controlling said signal based upon the cardiovascular response.

109. (Original) The method of claim 108, wherein said cardiovascular training induces relatively significant calorie usage in the subject.

110. (Original) The method of claim 108, wherein said cardiovascular training induces one or more benefits of aerobic exercise in the subject.

111. – 121 (Canceled)

122. (Currently Amended) A method for stimulating a muscle of a subject, comprising the steps of:

generating an electrical pulse signal in accordance with one or more predetermined parameters for stimulating the muscle by inducing vibrations therein;

applying the signal to nerves associated with the muscle of the subject to be stimulated for stimulating the muscle;

monitoring one or more physiological parameters of a subject;

~~maintaining a predetermined cardiac output by controlling said signal generator based upon an output of said monitoring; and~~

selecting the predetermined parameters of the electrical pulse signal to induce the predetermined cardiac output of at least 50% of the maximum cardiac output of the subject.

123. (Original) The method of claim 122, wherein said monitoring is performed by a heart rate monitor, and said predetermined parameters of said electrical pulse are varied based upon a heart rate of said subject.

124. – 132. (Canceled)

133. (Currently Amended) A method of stimulating muscles in a subject, comprising:

generating an electrical pulse signal;

applying the signal to nerves associated with muscles of the subject to be stimulated;

inducing muscle vibrations in a predetermined frequency range by selecting parameters of the electrical pulse signal;

controlling the induced muscle vibrations maintaining the muscle vibrations in the
predetermined frequency range to cause a cardiac output of at least 50% of the maximum cardiac
output of the subject.

134. (Previously Presented) The method of stimulating muscles according to claim 133,
wherein the predetermined frequency range is from 3 Hertz to 12 Hertz.

135. – 136. (Canceled)